RAILWAYS IN THE PAPAL STATES.

In a notification lately issued by Cardinal Gizzi, secretary of state, the Pope authorizes the execution of the lines of railway undermentioned:—1. That from Rome through the *Valle del Sacco*, to the Neapolitan confine near Ceprano. 2. That joining Rome with the port of Anzio. 3. One from Rome to Civita Vecchia. 4. That from Rome to Bologna, by way of Ancona, which passes through the most populous parts of Umbria, as Foligno and the valley of the river Potenza, and follows in part the traces of the Via Flaminia Emilia. —The conditions on which these lines shall be assigned to the companies, represented by pontifical subjects, after approval, are, the presentation of:—1st. The description of the lines contemplated. 2. "Artistic and economic information" which they may be able to give in regard to these lines. 3. The statement of the time in which they propose to complete the studies, and the works, if approved of, and of the time for which they demand the enjoyment of the concession after the completion of the works. 4. The security they propose to give in favour of the proprietors of the lands, and the security to the Government, before the works are undertaken, that they shall be completed. 5th. The exposition of the means by which they propose to conduct the undertaking. The interests of the pontifical subjects being considered, both as regards capital and work.—Three months are granted for presenting the projects, with these conditions, which time may be extended on proper representation.—The Government also notifies that the construction of these lines being secured, it will take into consideration the line from Foligno to Perugia, and Citta di Castello, through the *Valle del Tevere*, and others, whose utility may be perceived; and it further offers a gold medal of the value of 1,000 scudi, to whomsoever may indicate the best mode of passage between Umbria and the *Marche*.—This resolution of the Papal Government, holding out, as it does, the prospect of many other "judicial reforms, and economic ameliorations," in the words of the notification—will have a most important and invigorating influence upon the prosperity of the Roman states, and the effects of the enlightened policy of the present Pope will reach, through the still active agency of the Roman Catholic Church, far beyond the mere confines of Italy. —We trust, that a hint, given in the programme of conditions, may warrant us in assuming that some arrangements will be made for the careful preservation of all works of art which the works will approach, or which may be discovered during their execution.—The *Roman Advertiser*, the English newspaper published in Rome, still continues to give much interesting information to residents, and those who have visited "the eternal city," and may, we perceive, now be seen in London.

RAILWAY JOTTINGS.

The invention of a railway speed-register, or regulator, has been already cursorily noticed in *The Builder*, but no account of its mechanism has appeared till now that it has been called for and constructed for use on the East-Indian Railway, for the guidance of the servants, chiefly native, on that line; a circumstance likely to lead to its general adoption at home as well as abroad, as it provides for a want continually experienced, and hitherto inadequately supplied by tabular forms. It consists of a dial of about five feet in diameter, upon the upper half of which is a series of numbers, showing the distances of each station along the line, the number of hours occupied by every train in both directions between each station, and the several stations and stopping-places between the extreme termini. In the centre is a clock dial, by which the departure and arrival of every description of train can be ascertained at a glance. The several trains are indicated by elongated hands, which are worked by a movement constructed according to the speeds required, and attached to the works of the clock. In the railway regulator the goods' train travels at the rate of 12½, the passenger-train at 25, and the express train at 50 miles an hour. The trunk line movements are all indicated upon the outer circle; and the branches are provided for by a similar division of the dial, nearer the centre, by which means additional branches can at any time be introduced, and put in motion when required, without inconvenience, expense, or derangement of the original machine.——The saving of expense in the transit, by railway, of the yearly supply of 150,000 head of cattle, and 1,500,000 sheep, to the metropolitan market, is estimated at no less than 675,000*l.*; and considering that the trouble and expense of conveying live cattle and sheep are much greater than those of the mere dead-weight, from which, moreover, a heavy surplus of waste, garbage, &c., would be further deducted; the saving might be greatly increased by the transmission of the so far ready-prepared article instead of the live, as well as raw, material, with all its intolerable annoyances, both metropolitan and provincial.——The rate-payers and residents of Regent's-park and its vicinity have memorialized the Marylebone vestry against the Regent's Canal Railway scheme, as likely to deteriorate the property and destroy the retirement of the neighbourhood, as well as to stop the equestrian, and take away the security of the pedestrian, exercise in the park.——A brisk trade in coals, to be unshipped at Blackwall in order to avoid the heavy London port dues, and transmitted along the Blackwall and Stratford lines to Stamford, Cambridge, &c., is anticipated since the announcement of the Eastern Counties Company's intention to carry coals along their line. From Lynn, too, by way of Ely, an additional supply is looked for. Yorkshire coals are thus expected to be had at Cambridge for 17s. to 18s. a ton, and even Newcastle for 21s. to 22s.,—less, in fact, than in the metropolis, though to be thus further carried through the Eastern Counties to their ultimate market.——The South-Eastern Company design to form an immense locomotive establishment at Ashford, where the following and other buildings comprise but one-half of the works intended to be carried out simultaneously with their new lines. The works alluded to consist of a large engine shed, a repairing shop, smiths' and boiler shops, and tender shed. The engine shed, which is for sixteen locomotives, with tenders, is 208 feet 9 inches, by 63 feet. Four lines of rail extend the whole length of the building. The repairing shop has room for fifteen engines and tenders, length 395 feet by 45. Attached is to be a stationary engine of twenty-five horse power, for driving the works. A transverse crane, to move on rails, along this shop, will lift twenty tons at its centre. The smithy, which will contain twenty fires, is 176 feet long by 45 wide, and 28 high.——A bridge at Timsbury, over the Salisbury and Bishopstoke branch line has just fallen in.——The Shiffnall contract on the Shrewsbury and Birmingham line has been let to Mr. M'Leod of Gloucester.——Arrangements are in progress for the erection of the central station at Chester on an extensive scale, and at an estimated cost of 80,000*l.* A new and improved approach to the city is also projected.——In a late newspaper paragraph, it was announced, that a contract for works between Peterborough and London, on the London and York line, had been let to Mr. Brassey at 120,000*l.*, whereas Mr. Brassy's tender, which was for 75 miles, or the whole distance from Peterborough to London, was, in fact, 120,000*l.* below the next lowest bidder.——Contracts for 35,000 tons of rails for the London and York have been taken by the two firms of Bailey Brothers and the Colebrook Dale Company, but chiefly the former, at or about 10*l.* delivered; the rails to be only 72lb. ones. Sir John Guest and others declined, it is said; not liking the conditions, one of which, as reported, is, that if, within twelve months after the rails are laid down, the engineer disapprove of them, he may order the contractor to take them back, without any appeal from his decision. ——At Middlesborough, an extensive market-house and new town-hall were lately opened. We have already repeatedly noticed this striking manifestation of the creative power of railways (*inter alia*, see vol. iv., pp. 117, 316). The thriving town which has here so rapidly sprung up, besides its spacious docks and coal drops, and its excellent port, accessible at all times, its custom-house and ship-building yards, its church and chapels, has now several schools, a mechanics' institution, news' room, branch bank, various manufactories, three iron-foundries, and extensive rolling mill for bar-iron, &c. &c., and has for some years been lighted with gas. In business it now so far outvies the port of Stockton, of which it may be said to be an off-shoot, that while in 1844 and 1845 the shipments of coals at Stockton were respectively 22,644 and 21,170 chaldrons, those at Middlesborough were 137,885, and 195,796 chaldrons. By one establishment at Middlesborough, it is said that 70,000 chaldrons of Brancepeth coke were shipped to Railway and Iron-foundry Companies and others, throughout the three Kingdoms.——The North British Line is said to be on the eve of passing into Mr. Hudson's hands on a guarantee of 8 per cent. with half profits.——On the Dublin and Kingstown Line, second class carriages are henceforth to be lighted at night, along with the first class. ——The Board of Control and the Directors of the East-India Company have at length decided upon giving their sanction to the introduction of railway communication into British India, on the following conditions:—The Direct Trunk, or East-India Line, is to be adopted; the Government guaranteeing four per cent. to the shareholders. The amount guaranteed is fixed at 3,000,000*l.* to commence with: the guarantee to extend over fifteen years: Government to have the privilege of purchasing the railway after thirty years from the date of its completion, at the then fair market value of the property: the company to be incorporated by an act of the Legislative Council as well as by charter.——The preparatory works for the railway from Rome to the frontier of Naples and Civita-Vecchia have already commenced.——The French Minister of Public Works has just nominated a commission to report on the experiments commenced on the Sceaux Railway, constructed after a system of curves of small radius and worked by articulated carriages. The commission is also to report on the proceedings of the atmospheric railway established from Nanterre to St. Germain.—— The Dieppe Railway Tunnel has been bored (length 2,400 metres), and the mason-work begun; the engineer, Mr. Newton, having placed the first bricks in presence of Mr. Smith, the Company's agent, and the workmen.—— The virtual power of levelling the hills with the filled-up valleys, by piercing through the bowels of them, as in tunnelling operations, is likely, it appears, to receive a mighty accession of force from the operative aid of machinery, experiments with which, according to the *Moniteur Belge*, have been already made, in order to test the power of penetrating the Alps through the great projected tunnel about to be commenced on one of the Italian lines. "The machine was placed in front of the web, and effected a bore to the depth of eighteen centimetres in thirty-five minutes. At this rate the new invention will complete upwards of five metres of bore per day, and the proposed tunnel through Mount Cenis will be finished in the space of three years. The experiments have been repeated twice before several of the first engineers of France, and with the most complete success."

ELECTRO-TELEGRAPHIC PROGRESS.

The electric telegraph on the Midland Railway was opened for public use on Friday week, so that communication may now be made between Leeds, Normanton, Masborough, Sheffield, Chesterfield, Derby, Leicester, Rugby, Burton, Tamworth, Birmingham, Nottingham, Newark, and Lincoln, at the following rates per mile, namely:—Under ten words, 1d.; above ten, and under twenty, 1½d.; above twenty, and under thirty, 3d.; and for every additional ten words, one halfpenny per mile. A messenger, if required, may be dispatched from any of the above stations, on foot, at 1s. per mile; or if by postchaise, on a reasonable remuneration. In case of any message failing through the defect of the instrument, or neglect of the company's servants, the money will be returned. Messages relating to luggage lost or mislaid by the company's servants, are to be sent free of charge. ——By the way, the electric telegraph, like every good thing, is occasionally turned to evil account, as well as to good. We do not at present allude to the merely business qualifications of this winged Mercury, or swift-flying messenger—and to be, ere long, enthroned divinity—of

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